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Well here it is - the second issue of AUUGN. A little late because of the festive season, holidays, machine problems and the like.

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#### UNIX USER GROUP MEETING

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The next meeting of the Unix User Group will be convened by Juris Reinfelds and is to be held at the University of Wollongong on Friday MARCH the 15th from 9:30AM to 3:30PM in the PENTAGON, lecture theatre 5.

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#### UNIX T-SHIRTS

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There seems these days to be T-shirts for just about everything, so I got to thinking that a Unix T-shirt with suitable motif might just be the thing for all Unix types (gurus, llamas etc) to possess and wear etc..

Enquiries indicate that T-shirts plus printing (up to four colours) can be obtained for \$5.00 each plus postage, assuming a bulk order of more than thirty, the \$5.00 includes a T-shirt as well as the printing.

ALL that is needed is a suitable design. DO you fancy your-self as a budding artist? ARE you to become the Rembrandt of T-shirt designers? IF you have a design to contribute please send it to me. THE T-shirt design needs a catchy slogan as well as a design. DO you fancy yourself as a budding John Singleton? IF you have a slogan then send it to me.

If a suitable design and slogan appears I will take orders and money at the next User Group Meeting.

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#### SITE INFO

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Not much of a response to call in last issue for information on the various Unix sites. Has your site sent theirs ??

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miscellaneous rumours

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Level 7 Unix is ready to "go out the door" BUT the lawyers are still fiddling.

First UNIX/VAX licence has gone to U. C. Berkeley, under some special agreement.

Ian Johnstone  
AGSM  
PO Box 1  
Kensington 2033  
AUSTRALIA

(02) 662-3752



### **"Belle" sweeps chess tourney**

*It was computer checkmating computer in the ninth annual North American Computer Chess Championship, and a program developed by two Bell Labs scientists swept the four-round tournament. The winning program, named "Belle," was the product of Ken Thompson, right foreground, and Joe Condon, left, both of the Computing Science Research Center. During the tournament, the program analyzed as many as six thousand moves a second and flashed its choices on a terminal, dictating new positions for the chess pieces. Condon and Thompson, whose avocation is designing computer chess programs, point out that computer chess demands the study and development of sophisticated new techniques, some of which have already been applied to telecommunications. Belle was one of 12 entries in the event sponsored by the Association for Computing Machinery.*

We have now passed the half-way point in our stay in New Jersey. My "special studies project" at Bell Laboratories is continuing to be most enjoyable and personally rewarding.

At the end of November, on the Thanksgiving weekend, my family and I decided to forsake the opportunity of eating more turkey than we should, and drove to Canada instead. Thanksgiving is traditionally on a Thursday and the following Friday is a holiday, at least at Bell Labs and in the Madison school district. By leaving here at noon on Wednesday and returning on the following Sunday we managed to spend three full days in Waterloo and Toronto. The distance from here was more than 450 miles, and with a maximum speed limit throughout the U.S. of 55 mph (100 kph in Canada), the journey takes more than nine hours.

We stopped the first night at Niagara Falls, just across the Canadian border. This is a very popular tourist area in the summer, but at the end of November ... well, there is definitely room to move! We arrived at the Falls about 8 pm, to find them lit most attractively with coloured lights -- but at -3 degrees, it was not appropriate to linger long. The next morning we travelled on to Waterloo, through driving rain and mist -- not the most pleasant conditions at all. (At least it wasn't freezing rain.)

We arrived just in time for lunch and a 1pm appointment with Randall Howard. He is with the Computer Communications Networks Group, which is part of the Engineering Faculty, and I spent an interesting and stimulating afternoon in his and Charles Forsyth's company. The University of Waterloo is rather better supplied with computing hardware than the University of NSW. As a result, UNIX has been used mainly by post-graduates and staff, though some enterprising undergraduates have infiltrated onto the system of course, and are doing some interesting things. Johann George who is an EE u/g has just developed a "troff" output previewer which is of interest at BTL since it uses an HP 2648 terminal and its verisimilitude is somewhat better than the Tektronix previewer currently in use here.

They seem to have a number of very interesting local modifications to their UNIX systems (they have two) and an interchange of software between them and UNSW would certainly be useful. They have implemented file access lists as an extension to the normal access checking performed within the file system -- and system calls for "mkdir" and "schizio" (interchanges real and effective user-ids). Charles Forsyth has an assembler generator which means they are not so committed to M6800's as some places.

A major project at the moment is to devise a network to inter-connect most of the major campus computer installations. In their machine room, they have a stack (three high, as I recall) of LSI 11's, (part of the future network), but what really caught my eye -- large as life -- was ye olde Diva disk controller which they are actually using successfully. The secret is to get the necessary updates from Diva -- which for some reason Diva have been reluctant to supply!

I was able to catch up briefly on the recent fortunes of THOTH, the portable real-time operating system being written at the University of Waterloo. It is now running on two machines, and its owners seem reasonably happy with it, but they are not yet ready for distribution. One reason is that they are recoding it in a new language, Z, which also derives from B, via A! Whereas A was typeless, Z has types, and their experience has been quite interesting. From a programming point of view they still prefer A, but the compiler is able to compile significantly better code for Z. I didn't see a working system, but I did hear about their experiences using THOTH as a vehicle for some real-time programming exercises. Apparently students find the problem of controlling a model train (sorting the freight cars in particular) to be rather challenging -- the problem is not in the algorithm, but in anticipating all the various ways the train set will fail!

After staying overnight with friends, I caught the early train (7:15 on a cold, frosty morning!) to Toronto, leaving my family to drive up later in the day, and I spent the day at the University of Toronto, initially with Pat Hume (head of the Computer Science department; he is currently planning a revision of his programming text to use Pascal), and then, for most of the day with members of the Computer Systems Research Group. About a year and a half ago, the University of Toronto had a major fire in the building that housed their main computer centre. Fortunately very little equipment was destroyed, but it has been rather dislocating for the computer science people who are now scattered across the campus.

The Computer Systems Research Group (CSRG) is an amalgam of computer scientists and electrical engineers who cooperate in various ways. Currently there are two major projects: an implementation of the language Euclid, for the U.S. and Canadian Departments of Defence, and computer graphics, with special emphasis on music synthesis. Both the graphics and the Euclid implementation are being carried out under UNIX, on an 11/45. The CSRG has just acquired a second system, a business oriented (special cabinets) 11/50, which they are going to use to provide a general service to PGs and staff. They are using a variety of CRT terminals of various origins, but I don't believe that any of the ordinary terminals was better than the local UNSW product. However the HP vector display which they use for graphics is rather nice.

The primary use for the Euclid compiler will be to write a secure operating system kernel, (to be done by Ford Aerospace, if everything goes according to plan). It is very likely this kernel will look like -- you guessed it -- UNIX (and this is part of the basis for the rumour in the Canadian DECUS report). The second major project is sufficiently well developed that they have several real composers, including Yehudi Menuhin, very interested in "buying one". Their graphics display is reputed the fastest vector display around, (with a controller built by the "Three Rivers Computer Corp.", out of Carnegie Mellon) and is impressive in its resolution and speed.

The music synthesis system uses mainly graphical input, via a hand-held "mouse" on a tablet. The movements of the "mouse" are translated into cursor movements on the screen (i.e. they do not use a light pen). The cursor is used for selection from menus, and for drawing curves (e.g. to specify the attack on a particular musical note). Histograms for the spectral density of sounds can be specified. Finally everything can be brought together and the sound "played". Complete scripts can also be played, of course. The advantage from the practising musician's point of view is that he doesn't have to bother with numbers, or programming languages, or any of that sort of thing, and he gets immediate feedback. And it all runs under UNIX.

We spent the Saturday looking around Toronto and seeing more friends (we only made it about half way through our list). Toronto is now a big city - around three million - and compared with most U.S. cities, it is clean and tidy. By and large things seem pretty prosperous - there are numerous new buildings, some of them very attractive - and of course there is the CN tower, which can be seen from all over the city, which is not surprising, since it is the tallest man-made structure in the world. On a cold Saturday morning in winter, a very good place to take the family is the Ontario Science Museum, which has many fascinating exhibits on various aspects of science and technology. The children found plenty to see and do, since most of the displays invite participation and interaction.

We resisted the temptation to stay an extra day and to travel back on the Monday, when the roads would have been less crowded. For once, we really did the right thing! On Sunday, the roads were crowded, but the traffic was moving at the speed limit. On the Monday it snowed -- in this area we had 5" of slippery stuff (which didn't melt for nearly a week), and it took nearly an hour, instead of the usual fifteen minutes, to get to work. (I bought snow tires the next weekend, and of course it did not snow again for five weeks.)

In the first week of December, I was able to attend the ACM National Conference, which was held in Washington, D.C. This is a fairly large general conference (attendance about 1500), and being in a government town, a lot of the programme was government oriented, but with ten parallel sessions, that wasn't a problem.

The opening session took all the first morning and had some interesting moments. I had been looking forward to hearing Robert Floyd's Turing Lecture, but found it somewhat disappointing. His theme was that we should look for better computational paradigms upon which to base programming languages.

The sessions themselves were the usual kind of mixture, with some memorable parts. E.P. Miles showed some slides he had made using an Intercolor system mapping contours for various mathematical functions into eight colour combinations: most interesting and apparently quite effective for teaching mathematics. At a session on Computer Architecture, I heard Yaohan Chu talk some platitudes on "Direct Execution in a High-Level Computer Architecture", and Per Brinch Hansen speak in a surprisingly modest fashion on "Multiprocessor Architectures for Concurrent Programs". An interesting panel session was chaired by Al Aho on "Tools for Automatic Compiler Generation", with presentations by Steve Johnson, Susan Graham (U.C. Berkeley & Pascal), and R. Cattell from CMU. I think the session I enjoyed most was on "DBMS" with Barbara Liskov (MIT), Jack Minker (U. of Maryland), and most impressively, Jeffrey Ullman (Princeton; now writing in the field of DBMS).

There were two dominating impressions that I gained from the conference: firstly, the low profile exhibited by the major (leading?) computer manufacturers. Maybe the ACM conference is not a place where they would come on strongly anyway, but even so, apart from various hardware developments, they seem to be contributing relatively little to the overall pattern of evolution. Secondly, there is a rapidly increasing, apparently insatiable, demand from industry for computer Science graduates, including those, or especially those, with post-graduate experience. The Bell System alone apparently has requirements for more than a third of all the potential Ph.D. graduates in CS in the next five years; and I met at least two people who had turned down offers from Bell, to take better offers elsewhere. In particular, academia in the U.S. is not competing successfully - there are reportedly 150 academic positions in Computer Science currently available - and at least one school (University of Illinois!) has recently lost a significant number of tenured staff to industry.

The part of the conference that I enjoyed most was the Ninth National Computer Chess Tournament. Not being a chess fanatic, I was not really expecting too much, but in the event, it proved fascinating. I guess the fact that Ken Thompson with his little (suped-up) PDP11 was able to take on and conquer the reigning giants, notably "Chess 4.7", running on a Cyber 176 helped to hold my interest and to keep me out of bed past midnight on two nights running.

There were twelve competing programs, of which two were running on microcomputers which were simply carried into the tournament area. The rest were connected to "big brother" back home via telephone. (I expect the conference picked up the 'phone bill, which must have been quite substantial.) At the front of the room, there were six desks with the contestants and their paraphernalia huddled around. Beyond them were six large vertical boards (I would estimate about six feet square) against the back wall, and the state of play was reproduced on them, for everybody to see. The pieces were represented by circular painted styrofoam disks, which adhered to the boards as if by magic, (but I think it was magnetism). Thus the audience seated well away from the immediate area had no difficulty in viewing the action.

Interest was generated and sustained by David Levy, British chess master,

who is well-known for his successful wager with McCarthy, Michie et al. that no computer would defeat him at chess in the ten year period that ended last August. Levy gave running commentaries on the progress of each game (at least so long as he found it interesting), gave ad lib evaluations of positions, and his understanding of the strategies being followed by the contestants, and their likely future moves. (He did not foresee everything - and the fact that he was occasionally wrong about some interesting tactical moves just added to the interest.)

The most interesting game was the contest in the second round between "Chess 4.7" and "Belle" (Ken Thompson's program). The middle section of this game kept most people engrossed, including Levy, who neglected all the other games for more than an hour. "Belle" runs as two processes, and as soon as it has decided its own move, it forks off a new process to analyse the consequences of what it predicts its opponent's response will be. The climax of the game came when, after a very long pause during which "Chess 4.7" analysed more than 2 million positions, it announced its move, and "Belle" responded immediately. Talk about gamesmanship! Soon after Levy lost interest and more or less ignored the remainder of the match.

The second night (third round) was not so exciting, when "Belle" was matched with "Chaos" running on an Amdahl 470/V6. "Belle" lost position early and was lagging most of the game, so I didn't see much point in staying up beyond 1 a.m. in order to see it lose. (Such loyalty!) However just after I had left, the end came rather suddenly, when "Chaos" missed a discovered check, and "Belle" was able to pounce.

The final round was somewhat anticlimactic compared with the previous two, when "Belle" made short work of its final opponent. The win for Ken Thompson was a popular one around BTL, as might be imagined. Quite a few people had been following the progress of the matches from home, by logging in from their home terminals.

A very interesting part of the contest was the performance of the two microcomputer-based systems, especially "Sargon II" which scored two and half points out of four for the match, and was by no means outclassed. Many of the basic algorithms used by "Sargon" have been published, with the aim of encouraging new entries into the field, especially with microcomputers. It is not hard to foresee computer chess championships in the near future, where the contestants will all be carried into the room and plugged in. I think it would be most interesting to develop such a competition in Australia in the very near future. However there is no doubt that the largest computers will continue to be used for chess for many years to come. Ken Thompson, for one, is not at all confident of being able to beat all comers, human or otherwise, in the next few years.

John Lions,  
Madison, New Jersey,  
15 January, 1979.

UNIVERSITY OF GLASGOW

TEL: 041-339 8855

EXT. 478/7458



Computing Science Department,  
THE UNIVERSITY,  
GLASGOW, G12 8QQ.

11th October, 1978.

Dr. I. Johnstone,  
Australian Graduate School of Management,  
University of New South Wales,  
P.O. Box 1,  
Kensington,  
New South Wales,  
AUSTRALIA.

Dear Ian,

Herewith a tape containing collected UK software which was sent to CUNY in January and hasn't been heard of since! It is not your original tape, which I would like to retain for the time being, if that's all right with you. I have no easy way of copying it. (We have only one tape drive and our University media conversion facility cannot handle blocks greater than 8K bytes! Also as our large discs are out of action at the moment we are reduced to running on RK05's only, so I cannot extract the whole distribution at once). If you could send me in due course another copy of the distribution on our own tape, it would be greatly appreciated.

Kernighan & Ritchie's book on C (published by Prentice Hall) has now appeared in the U.K., and also I believe in Australia, which makes us particularly glad to have your distribution, as we shall be able to put together a version of the language which corresponds to the book. Peter Collinson is busy doing this at the moment, and will no doubt communicate with you direct if he has any queries.

Thanks again for your help.

Yours sincerely,

*Alistair C. Kilgour*

Alistair C. Kilgour.

encl.



Ian Johnstone  
Editor, AUUGN  
AGSM  
UNSW  
Kensington  
N.S.W.

Basser Dept. of Comp. Sci.  
Sydney University  
N.S.W. 2006

24th. October, 1978.

Dear Ian,

In response to your appeal in AUUGN 1.1 for site information, herewith our details for Basser:-

CPU	DEC PDP-11/40
MEMORY	DEC 990ns. core 32Kb. FABRITEK 650ns. core 96Kb.
BACKING STORE	COMPUTER LABS/PERTEC Disk Drive 2.5Mb * 2 XYLOGICS/OKIDATA 3300 Disk Drive 68Mb
ACCESS	DEC DZ11 MUX (8 lines) * 2
OTHER PERIPHERALS	TTY40 Printer 96 ASCII 2201pm. Versatec Printer/plotter 100bpi 5001pm. Burroughs B1726 on TD800 multi-drop communications line Imlac PDS-4 Graphics Display Computer. DEC PDP-11/34 Cyber 72 on 4800baud synchronous interface using UNSW batch system.
TERMINALS Tektronix	4006 * 2, Diablo Hyterm, NCR 260 * 25, TTY43 * 10, ADM-1A Apple II LA36
COMMUNICATIONS	Dial in/Dial out 300 baud DATEL line 1200 baud leased line to UNSW/AGSM 11/70
ACTIVITIES	Text preparation Cross-assemblers for various micros Tektronix plotting packages (PLOT-10 in C) Re .....al time control systems X-25 network interface
ODDS and ENDS	"ed" in BCPL available for CYBER 72

Piers Dick-Lauder

On-campus at UNSW we have nine PDP-11 machines of various sizes running UNIX, as well as one or two at off-campus locations. What follows is a quick summary of equipment at each site, including "foreign" makes, comments on how many users each site supports, and what we think of any special bits of hardware.

#### Australian Graduate School of Management (AGSM)

Hardware: 11/70 with FP11-C  
 96Kwords DEC core memory  
 128Kwords Ampex core memory (good)  
 2 RP04 disc drives  
 TU16 tape drive  
 2 DJ11 muxs  
 DZ11 mux  
 LP05 line printer  
 CR11 card reader  
 DP11 synch interface

User Pop: 300

Terminals: 34 total connected  
 6 dialup lines  
 1 Qume Sprint Micro 5/55 (ace)  
 4 links to other machines on campus

#### Architecture

Hardware: 11/40  
 8Kwords Dec core memory  
 96Kwords Fabritek core memory (good)  
 RX01 dual floppy disc  
 RM02 disc drive  
 TM11 tape drive  
 DZ11 mux  
 3 DL11 async interface  
 DP11 synch interface  
 Versatec printer-plotter (ok)  
 GT40 graphics terminal  
 HP x-y plotter (good)

User pop: 10

Terminals: 10 total connected  
 3 Tektronics (2 4006, 4015)

#### Commerce

Hardware: 11/40  
 64Kwords Dec core memory  
 32Kwords Fabritek core memory (good)  
 3 RK05J disc drives  
 ??? Ampex disc drive (poor)  
 DJ11 mux  
 CDC line printer with local interface  
 CDC card reader with local interface

User pop: 30

Terminals: 10 total connected

## Computing Services Unit (CSU)

Hardware: 11/40  
96Kwords Dec core memory  
32Kwords Fabritek core memory (good)  
3 RK05J disc drives  
RK05F disc drives  
2 TU10 tape drives  
DJ11 mux  
LV11 printer-plotter (ok)  
Gould printer-plotter (ok)  
CDC line printer with local interface  
CDC card reader with local interface  
DP11 synch interface  
GT40 graphics terminal

User pop: 15

Terminals: 10 total connected

## Electrical Engineering

Hardware: 11/70 with FP11-C  
64Kwords Dec core memory  
256Kwords Fabritek core memory (good)  
2 DM9100 Ampex disc drives (no comment!)  
MSC1100 disc controller (good)  
TE16 tape drive  
6 DZ11 muxs  
2 DL11 async interface  
KW11P programable clock  
CDC line printer with local interface  
CDC card reader with local interface  
HP x-y plotter (good)  
DP11 synch interface

11/34 (to front-end the 11/70)  
16Kwords DEC MOS memory  
DL11 async interface  
4 DR11C to link machines

11/40  
64Kwords Dec core memory  
40Kwords Fabritek core memory (good)  
3 RK05J disc drives  
DJ11 mux

User pop: 650

Terminals: 68 total connected  
45 home made  
7 down-line-loadable micro-processor development systems  
1 Tektronics 4015  
1 Qume Sprint Micro 5/55 (ace)  
1 Interdata Carousel 300 (hmmm yes well...)  
3 links to other machines on campus

## Library

Hardware: 11/40  
64Kwords Dec core memory  
4 RK05J disc drives  
2 TU10 tape drives  
DJ11 mux  
CDC line printer with local interface  
CDC card reader with local interface  
DP11 synch interface

User pop: 20

Terminals: 8 total connected

#### Mathematics

Hardware: 11/40  
64Kwords Dec core memory  
64Kwords Fabritek core memory (good)  
3 RK05J disc drives  
2 CDC line printers with local interface  
2 CDC card readers with local interface  
DP11 synch interface

User pop: 30

Terminals: 5 total connected

#### Mechanical Engineering

Hardware: 11/40  
16Kwords Dec core memory  
32Kwords Fabritek core memory (good)  
3 RK05J disc drives  
CDC line printer with local interface  
CDC card reader with local interface  
DP11 synch interface

User pop: 10

Terminals: 5 total connected

#### Water Research Laboratory

Hardware: 11/34  
48Kwords DEC MOS memory  
RK05J disc drive  
RK05F disc drive  
DZ11 mux

User pop: 5

Terminals: 2

Ross Gayler,  
Psychology Department,  
University of Queensland,  
St. Lucia, Qld. 4067.  
7 - Nov - 1978.

Ian Johnstone,  
Australian Graduate School of Management,  
University of New South Wales,  
Kensington, N.S.W. 2033.

Dear Ian,

here are two cartridges with the floppy driver you requested. I've put a copy on each disk for safety. I've also attached photocopies of the listings I received from Michael Lutz. Could you please send back the disks with the U.K. distribution on them? You did say it was 8000 blocks didn't you? If you can't fit it .....all on please make sure that you do put in the C compiler for Motorola 6800's. A note indicating the bugs which haven't been fixed yet would also be much appreciated.

The RPO2 at Computer Science takes IBM 2314 type disk packs ( 20 surfaces ). These are formatted in the mystical manner of DEC not IBM. The RPO3 reputedly takes the same disk pack but manages to fit on twice the number of tracks. If this is compatible with your obsolete disk packs it would be nice if you could send us the complete UNSW distribution. However, if it won't work fear not !! Computer Science getteth a tape drive in mid-January ( yea, verily and not before time either ) .

Here is the site information for Psychology and Computer Science for the next issue of AUUGN.

#### Psychology

Hardware:        11/34  
                  32 Kwords DEC MOS memory  
                  32 Kwords National Semiconductor MOS memory  
                  RK05f non-removeable disk drive  
                  RK05j removeable disk drive  
                  RX01 dual floppy disk drive  
                  DZ11 mux  
                  Floride Data FB-600A matrix printer  
                  DR11-K 16-bit general interface  
                  AD11-K 12-bit A/D converter  
                  KW11-K dual programmable clock

User pop:        15

Terminals:       4 total connected

November 7, 1978

Computer Science

Hardware: 11/34  
32 Kwords DEC MOS memory  
32 Kwords National Semiconductor MOS memory  
64 Kwords Intel MOS memory  
RP02 disk drive  
RK05f non-removeable disk drive  
RK05j removeable disk drive  
Data Systems dual floppy disk drive  
DH11 mux  
Texas Instruments 810 matrix printer

User pop: 30

Terminals 10 total connected

Yours sincerely,



November 7, 1978



# University of Melbourne

DEPARTMENT OF COMPUTER SCIENCE

Parkville, Victoria 3052

15th November, 1978.

Mr. Ian Johnstone,  
AGSM,  
University of NSW,  
Kensington,  
NSW, 2033.

Dear Ian,

Thanks for all the software which arrived quite safely. I have created a C version of 'dtp' which I used to extract it all, so I didn't need to hunt up a friendly PDP-11. If you are interested I will send it up once I have made it cope with linked files sensibly.

Also thanks for the Australian Unix User's Group Newsletter and for the information therein.

To answer your request for site details, our current hardware status is as follows:

- . Interdata 8/32, two register sets, hardware single precision floating point only, 384K bytes (all Interdata) memory, 2K words writeable control store, 2 selector channels.
- . 3 Ampex DM323 40 MByte discs (two from Interdata, one from Ampex) all on one controller.
- . Pertec 8X40A 800 bpi 9 track mag tape.
- . Tally 4000 300 lpm dot-matrix printer.
- . 4 channel D to A, 14 bit samples, up to 64K samples/second.
- & other odds and ends - Cyber link (UT200 compatible); home-grown, high speed link to Interdata 7/16, PDP-8 configuration; various terminals on 16 Paslas (Tektronix 4012, Intecolor 8001 (2), Telerays, Tty 43's, Decwriters, Carousel, and Diablo Hyterm) and one dial in port.
- & to come soon: Gandolph Programmable Automatic Computer Exchange (PACX) (installation next week(?)), 16 channel A to D (of which we will only use 2 channels), more memory and more paslas.

Software status and interests:

The machine is currently used for research and departmental document preparation, with a small amount of undergraduate use.

As we have had UNIX for only 7 months, software development hasn't proceeded very far - rather our efforts have been directed more towards 'software adaption' in converting PDP suitable UNIX software to suit the Interdata ( a task that really shouldn't be necessary - My major UNIX 'wish' is that PDP UNIX programmers would allow for us poor slobs, and avoid the following like the plague:

signed characters,  
assumptions that integers are 2 bytes long,  
(they are 'sizeof(int)')  
use of PDP backwards-byte integers.

Please!)

Current research interests are in computer music generation (that is in assisting the composer, not replacing him), speech synthesis and analysis, portable compilers, use of micro-code to assist in abstract machine emulation, and a project just beginning concerns multi-processor operating systems.

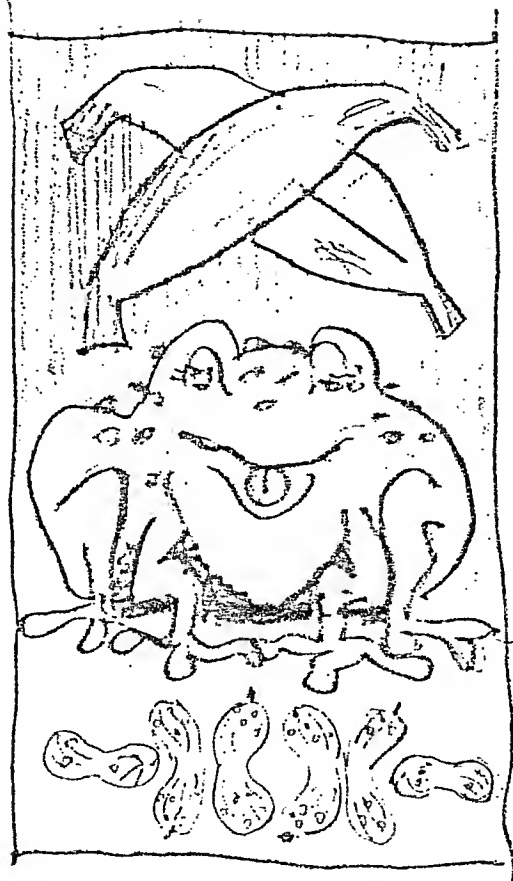
Thanks again for the tape and for your efforts with AUUGN,

Yours sincerely,

K. R. Elz.

Robert Elz.





Ross Gayler,  
Psychology Department,  
University of Queensland,  
St. Lucia, Qld. 4067.  
15 - Nov - 1978.

Ian Johnstone,  
A.G.S.M.,  
University of N.S.W.

Dear Ian,

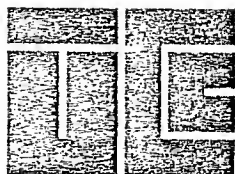
I think I've just killed physiological experimentation in this department. I've written a program which produces fake physiograph recordings to support any given hypothesis. It saves a great deal of time, previously all the physiological data was faked by hand.

Seriously though, I've included the cane toad medal with crossed bananas and peanut clusters as promised in a previous letter. I am only able to send you a facsimile as such valuable cultural artifacts are not allowed to leave Queensland. That's why we've still got Rjelke.

Please ignore this paragraph if you've already sent those disks back to me. I realize that you're very busy but would it be possible to get the UK distribution to me by Wednesday November 22nd? The department is hiring a couple of programmers for a month to work on experimental control software for the Motorola 6800's. All your work is much appreciated.

Yours faithfully,

  
Ross Gayler



university of toronto  
computer centre

November 17, 1978

Ian Johnstone  
Australia Graduate School of Management  
University of New South Wales  
P.O. Box 1  
Kensington, New South Wales  
Australia  
2033

Dear Mr. Johnstone,

I am representing a group of UNIX installations in the Toronto area most of which have previous close connections with the University of Toronto UNIX system. We are trying to consolidate our resources and representation. Two results of this move are a standardization of commonly used commands and the creation of a Toronto Distribution Centre. It is on behalf of the Toronto Distribution Centre that I am writing to request a copy of your "third" distribution. (I understand that this distribution contains the first two as well). I will then be handling the distribution to the other sites and thus, any information, restrictions, and reimbursements you might require, I would like to be appraised of.

Since several of the sites are commercial (one though, is government research, non-military), please inform me whether they would have special restrictions or arrangements. If they plan to do commercial work.

If you have any requests for software (the "third" Toronto distribution) please contact me. I am enclosing a copy of the U of T's standard agreement, if you do not have one.

Yours sincerely,

Gregory Hill  
UTCS, UNIX

UNIVERSITY OF GLASGOW

TEL: 041-339 8855

EXT. 478/7458



Computing Science Department,  
THE UNIVERSITY,  
GLASGOW, G12 8QQ.

20th November, 1978.

Dr. Ian Johnstone,  
Australian Graduate School of Management,  
The University of New South Wales,  
P.O. Box 1,  
Kensington,  
NEW SOUTH WALES.

Dear Ian,

Thanks for your letter of 7th November. On examining my master tape I have found that the errors you have discovered are present there also, so are likely to have been propagated to every site which has received the software. There must be some significance in the fact that you are the first to have reported the problem! I have written to QMC to try to get a correct copy of the files affected. It is rather complicated because their only transfer medium until recently was DEC tape, although I believe they now have an 11/70 with magnetic tape. I shall prepare a correct tape for distribution to all sites as soon as I get a response from QMC. Perhaps I could give a tape to Piers Lauder if it is available by the time of his visit.

Sorry for the trouble you have had.

Best wishes.

Yours sincerely,

Alistair C. Kilgour.



# University of Melbourne

DEPARTMENT OF COMPUTER SCIENCE

Parkville, Victoria 3052

2nd November, 1978.

Mr. Ian Johnstone,  
AGSM,  
University of New South Wales,  
Kensington,  
NSW.

Dear Ian,

Here is the tape that I promised you in our telephone conversation on the 21st.

It contains 5 files:

- 1) ntp format - of which a directory listing is also enclosed.
- 2) tp format, in case our ntp format isn't the same as yours.
- 3) & 4) copies of 1) and 2) in case of parity errors etc.
- 5) ntp.c in dd output format:  
    dd if=ntp.c of=mt0  
    - in case our tp format isn't the same as yours  
      (a possibility I have some evidence to support).

You will note that most programs included here are simply modifications of programs from other places. I have tried to select programs of which I believe our modifications to be useful (which is not to say anything about the program itself).

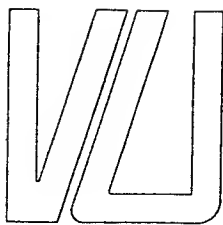
Further to my letter of the 15th, I can now add that the Gandalf PACX is now installed and operational, and looks like being a useful addition to UNIX.

Yours sincerely,

K.R. Elz

Robert Elz.

RE/JMO



1007 mc amsterdam  
de boelelaan 1081  
postbus 7161  
telefoon 020 - 548 24 10

Ian Johnstone  
Australian Graduate School of Mgmt  
University of NSW  
Box 1  
Kensington, NSW  
AUSTRALIA 2033

uw kenmerk

uw brief van

ons kenmerk

datum

bijlage(n)

onderwerp

11 Dec

Dear Dr Johnstone

Our compiling system has two parts compiled code & interpreted code. The compiling part works but the interpreting part does not yet. The compiling part compiles very slowly (800 lines/min on an 11/45 with cache) but executes almost as fast as C programs. The interpreting part compiles fast & executes slowly. Basically there is only 1 compiler, which produces EM-1 code (see my paper in the March 1978 CACM). We then either translate EM-1 to PDP-11 code or interpret directly. It is the EM-1 to PDP-11 translation that is slow, due to all the optimizing we do. The compiler itself is 3000

You can have the compiling part if you can tolerate slow compilation. Unfortunately we do not have a magnetic tape drive. This means you will have to send an rk pack. If you want to take the time to investigate how to send an rk pack by air is asking to pay the air freight or air post or however it can be done, fine.

If we do manage to get it to you, please publicize the fact that you have a copy, so other Australians can copy it from you, thus saving months of time.

Obtainable from  
ian johnstone NOW !!

Yours truly

Andrew Tanen

Andrew Tanen

P.S. The interpreting part is expected soon.

 Monash University

CLAYTON VICTORIA AUSTRALIA 3168

TELEPHONE: 03 541 0811    TELEGRAMS: Monashuni Melbourne  
TELEX: MONASH 32691

DEPARTMENT OF PHYSIOLOGY

13th December, 1978.

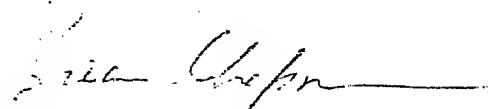
Professor M. Allen,  
Department of Electrical Engineering,  
University of New South Wales,  
KENSINGTON. N.S.W. 2033.

Dear Professor Allen,

I have recently returned from study leave spent in the Department of Physiology at Duke University in Durham, North Carolina. The work I performed there involved digital computer simulations on a PDP 11/60 using the operational system UNIX. Enquiries with the local DEC people in North Carolina revealed that UNIX was in use at your university, and recent enquiries with DEC in Melbourne have suggested that it is used in your Department. Dr. W.A. Brown of our own Electrical Engineering Department suggested that I contact you for further information.

Can you please tell me the cost of purchasing UNIX in Australia, who are the local agents, and whether or not it can be used on a PDP 11/40? The Melbourne DEC people were not able to answer the first two of these questions, and they were uncertain regarding the third. If you are able to help me with any information I should be most grateful.

Yours sincerely,



J. Brian Chapman, Ph.D.  
Senior Lecturer in Physiology.

UNIVERSITY OF GLASGOW



Computing Science Department,  
THE UNIVERSITY,  
GLASGOW, G12 8QQ.

TEL: 041-339 8855  
EXT. 478/7458

14th December, 1978.

Dr. Ian Johnstone,  
Australian Graduate School of Medicine,  
University of New South Wales,  
P.O. Box 1,  
Kensington,  
New South Wales,  
AUSTRALIA 2033.

Dear Ian,

We had a most interesting visit last week from Piers Lauder. I have given him a copy of the latest release of the Vrije University of Amsterdam Pascal System. This was distributed to U.K. users at the last User Group meeting at Essex in September. Since then we have had word about some bugs, and I enclose a copy of the letter we received from Amsterdam. Also enclosed is a copy of an article which appeared in "Computer Weekly" on 3rd August this year, which I thought might be of interest.

I shall send under separate cover a magnetic tape containing the latest U.K. software. This is from Heriot-Watt, Essex and Kent, the last being a complete copy of the Kent system which incorporates many of the New South Wales improvements. I shall append to the tape a copy of the latest release of the Sussex POP-11 system, a Unix implementation of the POP-2 language. There are a large number of short files on this dump- it takes over 20 minutes to extract on our system, but a lot of the material consists of student exercises and documentation. It may be of interest that Jim How<sup>2</sup> of the Bionics Research Laboratory at Edinburgh is developing a separate POP-2 implementation on his 11/60 Unix system, and is also intending to implement LOGO.

The news from Piers Lauder via John Lyons that Bell are likely to announce a VAX version of Unix when Version 7 is released is of considerable interest here. The Computer Science Dept. at Edinburgh have just taken delivery of a VAX, I think the first in a British University, but they haven't decided yet what system to run. The availability of Unix I think will make a big difference to the attractiveness of VAX as a departmental system.

With best wishes for Christmas and the New Year.

Yours sincerely,

*Alistair C. Kilgour*  
Alistair C. Kilgour.

P.S. I just received your tape this morning - many thanks.

*ACK*



# AT&T opposed as software vendor

3 Aug 78  
p19

THE Computer and Communications Industry Association has charged that AT&T's marketing of software, through its Western Electric supply arm, is a violation of the 1956 Consent Decree. That decree, entered into by the US government and AT&T, settled an anti-trust suit filed in 1949.

After months of prodding by the CCIA, the Justice Department recently put AT&T on notice that a formal investigation is underway.

CCIA's protest argues that the intent of the consent decree was to restrict Western Electric to the manufacture of products used directly in the common carrier network, and that while such equipment might be marketed to common carriers not within the Bell System, it was not to be marketed to other companies in the competitive private sector.

"To read the decree more broadly," CCIA contends, "would interpret the settlement in that anti-trust suit to expand, rather than to reduce, the Western Electric monopoly which the government was prosecuting."

To support its claims, CCIA points to pertinent sections of the decree which describe marketing areas allowable to AT&T. One section in particular reads: "[AT&T and Western Electric] are each enjoined from commencing, and . . . from continuing, directly or indirectly, to manufacture for sale or lease any equipment which is of a type not sold or leased or intended to be sold or leased to companies of the Bell System, for use in furnishing common carrier communications services."

AT&T's software showcase, as described in corporate marketing materials, includes "system programs" which monitor the overall operation of a computer system; "utility programs" which perform general purpose functions such as text editing

and typesetting; and "applications programs" which perform specific engineering and scientific functions.

"Virtually none of this software is oriented toward using computers directly to provide common carrier communications services," CCIA contends.

In recent advertisements, AT&T mentions that it has over 300 software users in the US and 18 in foreign countries. But CCIA claims the company has close to 600 users of one product alone — the UNIX system.

Bell System literature describes the UNIX program as one that "effectively converts the DEC PDP-11/34, 40, 45 and 70 into a small-scale computer centre supporting up to 40 users."

According to the trade association, sales of UNIX, by itself, "make AT&T one of the largest computer software companies in the industry."

CCIA's charges were first presented to the Justice Department in an April 7, 1978, letter from CCIA president Jack Biddle to John Shenefield, Assistant Attorney General for Anti-trust. Months later, after the Justice Department "had neither acted upon nor responded to" the protest, CCIA opted to make the letter and accompanying documentation public.

"After this latest indication that the Department of Justice plans to do nothing more than carry out a charade of enforcement of the 1956 Consent Decree with AT&T," Biddle said in releasing the material, "CCIA has called upon the Congress to investigate the Department's failure to act."

Following CCIA's public outcry, a Justice Department official informed the association in a letter that a formal investigation has been initiated. Justice attorney John Wilson also apologised for the department's delay in the matter.

Computer Science Lab.  
The Hebrew University

December 31, 1978

Ian Johnstone  
Australian Graduate School of Management  
in the  
University of New South Wales  
P.O.Box 1, Kensington,  
New South Wales, Australia 2033

Dear Mr. Johnstone:

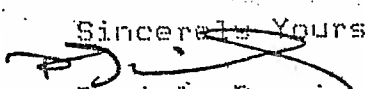
We have been running UNIX on our PDP 11/45 for 3 years now. Our community is expanding rapidly and hence we are looking for ways to improve performance and increase security.

In the Newsletter Dec/77, Vol. 3 No. 1 we read about the changes you have implemented in your system.

Since New-York is no closer to us than Australia, we are wondering whether you could send us directly the software you are distributing. If this happens to be the case, please send us correct procedures to obtain it.

We are considering buying an 11/70 and would appreciate it if you could give us information about performance and security when serving a large number of "unfriendly users".

Sincerely Yours

  
Daniel Braniss, Computer  
Science Lab Manchester  
Bldg. Room 103 The Hebrew  
University, Jerusalem,  
Israel.

Ross Gayler,  
Psychology Department,  
University of Queensland,  
St. Lucia, Qld. 4067.  
5/1/79.

Ian Johnstone,  
A.G.S.M.,  
U.N.S.W.

Dear Ian,

I hope you've not suffered too much from end of year revelry. As a Christmas present Bell Labs sent us a set of PWB/UNIX manuals. Unfortunately it was a mistake (Honestly! They should've gone to somebody in Illinois.) and they phoned us to say that they didn't know what they sent us but could we please ship it back.

We thought it would be a pity to return such a lovely Christmas present especially as it had \$54 postage on it. So we asked the Computer Science department if they would like to buy the manuals. They said they would and we sent a letter to Bell explaining what had happened and asking the price of the manuals.

Computer Science may have to get a PWB/UNIX licence to own the manuals. So could you please tell me how much your PWB/UNIX licence cost or were you trying it out under some special agreement?

Yours faithfully,

  
Ross Gayler

January 30, 1979

Dear Ian,

Visiting the UK in winter is a cold and hazardous experience, however I managed to brave the snow and visit a couple of Unix sites, and I thought you might be interested in some brief observations.

While still in London I went to Queen Mary's College to visit George Coulouris of 'em' fame. George is still enamoured of editors and his latest is called 'ded' - a real beaut - the 'd' stands for display, and it seems to do everything you always wanted (plus em). I also met a colleague - Ben Salama - the resident Unix system guru, who was busy trying to get 'dtp' working on the original Bell HT driver, which as you know was full of bugs. QMC seemed to be quite well supplied with hardware, though they possessed the smallest machine room I have ever seen - it only just fitted an 11/70 and several disk drives crammed together, with room for two gurus breathing in unison left over. The 11/70 supports first-year teaching and there is a 11/40 for 'playing'. Everybody seemed heavily into VDU manipulating programs; I saw the most amazing version of 'mail' with a 'menu'.

Later on and further north I got to Glasgow. The Computer science department is very charmingly knocked together from several terrace houses, the key to travelling in it is to know there's a thru-route somewhere on the second floor. Alistair Kilgour (well known purveyor of fine UK Unix Software) is in control of a thriving 11/40 system with the usual clutter of non-DEC peripherals. Glasgow is getting a VAX to run first-year teaching and Alistair seemed confident (via the usual sources) that Bell will deliver VAX Unix in time.

Finally I went to visit Edinburgh on Alistair's recommendation to talk to Jeff Tansley. Edinburgh are divided into two groups as far as operating systems are concerned, - the pro EMAS (Edinburgh Multi-Access System) and Not-invented-here group, and the Let's-give-UNIX-a-go group. EMAS runs on everything in sight, an ideal situation for users, though I got the idea of how it handles - but definitely a successful portable operating system. The pro-UNIX group feel they may be getting a trifle isolated however. And I saw my first live VAX - they had had it a week and already the EMAS system language was producing native mode successfully. No one had anything nice to say about the DEC operating (sic) system, VMS. The department seemed to specialize in compilers - I was offered several off the shelf, all with good documentataion. But on the whole not much was being on UNIX, the main user on campus apparently being the Department of Psychology.

Overall I was impressed with the amount of hardware around, no one seemed to be short of disk space (sigh), on the other hand there was no paid programming, everthing getting done with enthusiastic but casual, part-time labour (plus unpaid students, of course). I was repeatedly informed that multi-access is dead, the coming thing is to be personal computers linked to very high speed data storing networks - so why make UNIX handle more users? Except for first year teaching, and hence the popularity of VAXs and the like. Alistair Kilgour and Ben Salama both promised to send tapes with their latest goodies, notably 'ded' and the Vrijie Pascal compiler, which I believe you have already received.

All in all some pleasant and stimulating meetings brought about by an international enthusiasm for UNIX. Worth braving the blizzards for, but it feels good to be back.

I remain, as ever, your most faithful UNIX enthusiast at Sydney University,

Piers Lauder